

Name_____

Date_____

AE Chemistry
Chapter 1 Study Guide

Use your notes and concept map to answer the following questions.

1. Define Chemistry
2. Since chemistry studies matter what is the definition of matter.
3. What is the Law of Conservation of Matter?
4. What is energy, what are the two types of energy?
5. What is the Law of Conservation of Energy?
6. What are physical and chemical changes?
7. Classify the following as either a chemical change/property (C) or a physical change/property (P).

_____ Burning Paper	_____ Water melting	_____ Digesting Food
_____ Painting a wall	_____ Water Evaporating	_____ Cutting Wire
_____ A metal shining	_____ Measuring water in a cylinder	_____ Crushing Rocks

8. What are the four things that indicate a chemical change?

1.

3.

2.

4.

9. Define the following terms

Heterogeneous

Homogeneous

10. Classify each of the following as a *homogeneous* or *heterogeneous* substance.

a. Iron Filings _____ b. Granite _____

c. Soft Drink _____ d. Milk _____

e. Foul Water _____ f. Cement _____

11. a. Use your concept map and flow chart to classify each if they are a **Pure Substance** or a **Mixture**.

b. If it is a pure substance, indicate if it is an **Element** or **Compound**.

If it is a mixture, indicate if is **Heterogeneous** or **Homogeneous**.

Argon _____

Water _____

Salt Water _____

High Pulp OJ _____

Air _____

Iron _____

12. What are mixtures? What are the three types of mixtures and how do you tell them apart?

13. What is a pure substance? What is the law of definite composition? What are the two types of pure substances?

14. What are the properties of metal, nonmetals and metalloids?

15. What are the rows on the periodic table called? What are the columns called? How are elements sorted into rows and columns?

16. Choose the word from the word bank below to fill in the blanks in the following paragraphs relating to classification of matter. Some words may not be used at all.

atoms	definite	homogeneous	mixtures
molecules	evaporation	heterogeneous	substances
chemical	elements	identical	can
physical	compounds	different	cannot
different	Tyndall Effect	suspension	colloid
settle	smallest		

An element is a substance that _____ be broken down by chemical change. All atoms of a particular element are _____ in nearly all properties. The fundamental units of all elements are _____.

A compound is a substance that _____ be decomposed by a chemical change. All samples of a compound have a _____ chemical composition. The smallest units of most compounds are called _____.

A mixture consists of two or more _____ that differ in their properties and make-up. Mixtures may have _____ compositions. Mixtures that have uniform compositions throughout are called _____. Mixtures whose compositions that are not uniform throughout are called _____. A mixture may be separated by into its components by such processes as filtration, centrifugation, or _____. These processes are based on differences in the _____ properties of the substances making up the mixture.

There are other types of mixtures called _____, _____, and solutions. The solution has the _____ particles, while a suspensions particles can be seen and will _____. The colloids can be identified because you can see a beam of light because of _____.